State of Oregon
Department of Environmental Quality Memorandum

To: Sean Sheldrake
EPA Region X

Date: November 3, 2005

From: Matt McClincy
NWR/ Portland Harbor Section

Subject: DEQ Comments
Draft – Monitoring and Reporting Plan – Post Construction
Removal Action
NW Natural "GASCO" Site

The Department of Environmental Quality (DEQ) has reviewed the October 2005 *Monitoring and Reporting Plan – Post Construction – Removal Action - NW Natural "Gasco" Site* prepared by Anchor Environmental, L.L.C. DEQ's comments are presented below.

General Comments

The use of the removal action area as a pilot test cap is really the result of convenience. This location was not selected based on a determination that the groundwater flux at this location is representative of conditions in other areas that will be considered in a future feasibility study (FS). Therefore, before results of the pilot study are applied elsewhere, it must be demonstrated that groundwater is discharging through this area and the flux and contaminant loading can be used to evaluate future FS alternatives.

Specific Comments

1. Section 1.1.2. Page 2. The objectives of the pilot study should be expanded to include quantifying groundwater flux through the temporary cap and to better understand and estimate contaminant loading of the cap (i.e., recontamination).

2. Section 1.1.3. Page 2. First Bullet. Revise "*product-like material*" to "*nonaqueous phase liquid (e.g., tar oil or tar).*" Insert bullet "Determine surface water quality overlying the temporary sediment cap".

3. Section 2.1. Page 4. DEQ recommends that surface water samples be included in the pilot study monitoring program. Sampling points should be placed upstream, downstream, and within the area of the temporary cap. DEQ recommends using a time integrated sampling method (e.g., semipermeable membrane devices) be used to assess water quality in the immediate vicinity of the cap and to assess potential recontamination of the cap from the water column.

4. Section 2.1. Page 4. Visual/Diver Inspections. In addition to the diver survey, visual inspections of the near shore cap and river should be conducted from the beach or dock on a weekly basis over the first 6-months and monthly thereafter to identify any potential sheen,

product releases, etc. If sheen or product releases are observed, contingency measures should be implemented.

5. Section 2.1. Page 4. Visual/Diver Inspections. In addition to diver surveys of the "low spot", cores should be specifically advanced in this area. In addition, the diver's should note any evidence, if any, of organisms or recolonization of the temporary cap.

6. Section 2.1, Page 4; and Section 3.1.3, Page 7. Seepage Monitoring. It should be noted that sediment cores will also be logged to document any indication of biologic activity (e.g., organisms, bioturbation) or chemical changes (e.g., redox, sheen, odor).

7. Section 2.1, Page 4 and Section 3.1.4, Page 8. Porewater Migration Sampling. DEQ recommends that in addition to porewater samples immediately above the temporary cap-sediment interface that samples also be collected either at the temporary cap/surface water interface be collected using flux chamber type technology or using minipiezometers (e.g., Trident Probes) approximately 6-inches to 1-foot above the temporary cap/sediment interface. This data can be used to estimate cap loading and may not be as likely to be affected by "artifacts" described in the plan. At least some of the porewater samples should be targeted for areas where there is known groundwater discharge and should be timed with the tidal cycle to sample groundwater discharging through the temporary cap. If the data is not already available, flux chamber sampling for conductivity through a tidal cycle (or another acceptable method suggested by NW Natural) should be conducted to better understand the discharge areas and groundwater discharge relative to the tidal cycle.

8. Section 2.2, Page 5 and Figure 3. Monitoring Area and Locations. This section and Figure 3 indicate a single transect with 3 sampling stations are proposed for monitoring. DEQ does not concur that this sampling design will "capture any variations in seepage and/or porewater migration with distance from the shoreline." A minimum of 6 additional sampling locations should be proposed to either increase the sampling density to account for potential variability or locations should be selected based on a systematic identification of key groundwater discharge areas within the temporary cap.

9. Section 4.1 Second Bullet. Bank signage for a no wake area may no be sufficient. Buoys with the "no wake" symbol and text should be placed surrounding the temporary cap.

10. FSP. Section 3.3.1. Page 4. Survey Methods. The dive crew should document the condition of the cap using video recording equipment.

11. FSP. Section 3.5 and Section 3.6.2. Through Cap Cores. Both of these sections and section 3.1.4 of the work plan note that collection of representative samples can be difficult due to "potential sampling artifacts" and that interpretation of results will be evaluated in the context of such "artifacts." It is not clear from the FSP how the data will be evaluated to distinguish between a "sampling artifact" and a real problem due to contaminant migration. Therefore, as noted in previous comments additional sampling locations should be included to allow a better analysis of sample variability and potentially statistical significance. Each sampling location

should include 2 levels of sand cap porewater samples, flux measurements, and a surface water sample.

12. FSP Section 3.5.1. Elevation of the mudline will be determined relative to Mean Lower Low Water (MLLW) elevation. The project maps are in NAVD 88 which is the current national standard. Why use a different datum for the mudline?

13. FSP. Section 3.5.2. It is recommended that surface water samples be initially collected at a station, followed by pore water and then cores samples. This should lessen the impacts resulting from the collection of the cores.

14. FSP. Section 3.6.2. Page 12. Porewater Collection and Processing. It is unclear how the Trident Probe will be modified to accurately target the proposed sampling interval. DEQ recommends NW Natural consider the use of diver placed minipiezometers and the collection of samples at two depths within the cap (see Comment 7 above) in selected locations. In addition, DEQ recommends the collection of groundwater samples using flux chamber technologies (e.g., UltraSeep, manual) or small volume peepers to monitor porewater quality near the temporary cap/surface water interface.

15. FSP. Section 3.6.3. Data collected from the monitoring program should be used to estimate loading of the temporary cap material and modify the monitoring program to best meet the objectives of the monitoring program.